

REMARKS

This case has been carefully considered in light of the Office Action dated September 24, 2002. The specification has been amended to correct typographical errors. Figures 1 and 2 have been amended. Claims 1 and 6 have been amended. Claim 2 has been cancelled. No new matter has been added. Reconsideration is respectfully requested.

I. Amendment to the Specification

The specification has been amended to correct typographical errors. No new matter has been added with this correction.

II. Objection to Drawings

The drawings have been objected to for not including reference signs mentioned in the description. As suggested in the Office Action, Figure 2 has been corrected to include reference numeral 50 and Figure 1 has been corrected to label block 20. These changes are shown in the attached drawings in red ink. No new matter has been added with these changes. As such, the objections have been overcome. It is respectfully requested that the objection to the drawings be withdrawn.

III. Rejection under 35 U.S.C. §102

Claims 1 and 6-8 have been rejected under 35 U.S.C. §102 as being anticipated by Le Roy (U.S. Patent No. 5,822,363). Claims 1 and 6 have been amended to include the recitation in Claim 2. Applicant's respectfully traverses the rejection of Claims 1 and 6-8 under 35 USC 102.

Amended independent Claims 1 and 6 of Applicant's invention recites an encoder for encoding a digital baseband signal in a geometric harmonic modulation communication system. The encoder comprising an exclusive "or" logic unit having a first input for receiving the digital baseband signal, a one bit delay unit having an input coupled to the output of the exclusive "or" logic unit, the one bit delay unit having an output coupled to a second input of the exclusive "or" logic unit; the output of the exclusive "or" logic unit providing an encoded digital baseband signal, the encoded digital baseband signal coupled to a modulator so as to modulate spread spectrum carrier signal.

Le Roy does not teach, suggest or disclose each and every element of Applicant's invention as recited in amended independent Claims 1 and 6. Specifically,

Applicant's invention recites an encoder for encoding a digital baseband signal in a geometric harmonic modulation communication system. The Le Roy reference provides no teaching or suggestion of an encoder for encoding a digital baseband signal in a geometric harmonic modulation communication system. Accordingly, the Office Action does not reject Claim 2, now amended into Claims 1 and 6, under the Section 102 rejection under Le Roy.

Therefore, the present invention, as claimed in amended independent Claim 1 and Claim 6 are not anticipated by Le Roy. Claims 7 and 8 depend directly from Claim 6. Accordingly, Applicants submit that claims 7 and 8 are allowable by dependency. Therefore, as stated above, the present invention, as claimed in Claims 1, and 6-8 are patentable over Le Roy. Thus, it is respectfully requested that the rejection of Claims 1 and 6-8 under 35 USC §102 be withdrawn.

III. Rejection under 35 U.S.C. §103

Claims 2, 3-5, and 9-11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Le Roy (U.S. Patent No. 5,822,363) in view of Hershey et al. (U.S. Patent No. 5,844,949) (hereinafter Hershey). Applicant respectfully submits that Claim 2 has been cancelled and incorporated into Claims 1 and 6. Applicant's respectfully traverses the rejection of Claims 3-5, and 9-11 under 35 USC 103(a).

Independent Claims 3, 4, 6 and 10 of Applicant's recited invention are directed towards a geometric harmonic modulation communication system that facilitates identification of transmission errors, which result from the time varying transfer function due to transmission through distribution transformers (page 5, lines 21-27). The geometric harmonic modulation communication system comprises an encoder that includes an exclusive "or" logic unit and a delay unit. The exclusive "or" logic unit includes a first input for receiving the baseband digital signal to be encoded. The one bit delay unit includes an input coupled to the output of the exclusive "or" logic unit. The one bit delay unit further includes an output coupled to a second input of the exclusive "or" logic unit. The undelayed output of the exclusive "or" logic unit provides the encoded digital baseband signal. As discussed with reference to the rejection under 35 USC 102, Le Roy does not teach, disclose or suggest all of the elements of Applicant's recited invention. Applicant respectfully submits that Hershey does not overcome the above noted deficiencies of Le Roy.

Hershey teaches a method for communicating digital information over a wire having harmonic interference frequency lobes. Hershey does not teach or suggest the use of a logic unit and a one bit delay unit for encoding a digital baseband signal. The Office Action has referred to column 4, lines 32-43 in Hershey as providing a disclosure

with respect to a typical GHM coding scheme. Applicant has carefully reviewed these sections and submits that there is no teaching or motivation, in these sections or in any other section of Hershey, suggesting the desirability of using a logic unit and a one bit delay unit along with a typical GHM coding scheme to generate an encoded digital baseband signal. Even further, there is no teaching, motivation or suggestion in Hershey that facilitates identification of transmission errors, which result from the time varying transfer function due to transmission through distribution transformers. Hershey instead teaches a system for communicating digital information over wires having a great deal of harmonic distortion, such as a power line, that employs a transmitter. The transmitter creates a carrier wave for each of a plurality of signals to be sent and has frequency lobes positioned between the frequency lobes of the harmonic distortion (column 5, lines 10-23).

In view of the above, the combination of Le Roy and Hershey, as suggested in the Office Action, would not meet the limitations of Applicant's claimed invention as recited in amended independent Claims 3, 4, 6 and 10. In addition, the combination of Le Roy in view of Hershey would not meet the limitations of independent Claim 1 for the same reasons.

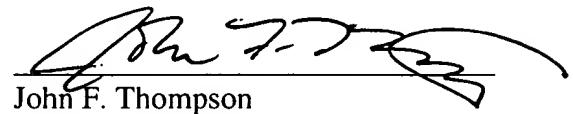
Furthermore based on the arguments above, Applicant respectfully submits that the Office Action has not set forth a proper motivation for combining the teachings of Le Roy and Hershey. Since there is no motivation to combine the references suggested in the Office Action, Applicant further submits that one of ordinary skill in the art would not have any motivation to use the teachings of Le Roy and Hershey to make a combination that results in Applicant's claimed invention as recited in Claim 3, 4, 6, 10, and Claim 1.

Furthermore, even if teachings of the references cited in the Office Action were somehow combined, no combination of the applied references teach or suggest Applicant's invention as recited in Claims 3, 4, 6 10, and Claim 1 because none of the references teach or suggest a geometric harmonic modulation communication system that facilitates identification of transmission errors which result from the time varying transfer function due to transmission through distribution transformers.

Accordingly, Applicant respectfully submits that the claimed invention, as recited in amended independent Claims 3, 4, 6, 10 and Claim 1 is patentable over the combination of Le Roy and Hershey et al. Claim 5 depends from Claim 4, Claim 9 depends from Claim 6 and Claim 11 depends from Claim 10. These dependent claims are also patentable over the suggested combination based on their dependency. It is respectfully requested that the rejections of Claims 3-5, and 9-11 be withdrawn.

Based on the amendments and arguments presented herein, Claims 1-11 are in condition for allowance and such a disposition is respectfully requested. There are no time-related fees associated with the filing of this Amendment and Response. If any fees have been incurred with the filing of this Amendment and Response, please charge the fees to Deposit Account No. 07-0868.

Respectfully submitted,



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ATTACHMENTS

Marked Up Copies to All Amendment From Amendment and Response
Office Action dated September 24, 2002

IN THE SPECIFICATION:

On page 3, lines 27-36, please replace the paragraph with the following:

A typical spread spectrum system 10 comprises a generator 20 for generating spread spectrum carrier signals, such as GHM signals or spreading codes, a modulator 16 such as a multiplier, for modulating the carrier with a data signal, a digital to analog converter 22, and a bandpass filter 24. In one embodiment of the present invention, the generator 20 generates GHM signals according to techniques described in U.S. Patent 5,519,725, incorporated by reference hereinabove. In GHM applications for communicating via a power line, a power line coupler (best illustrated in FIG. 3) is employed to couple the spread spectrum signal to and from a power line.

IN THE CLAIMS:

Please amend the following claims:

1. (Amended) An encoder for encoding a digital baseband signal in a spread spectrum communication system, said encoder comprising:

an exclusive “or” logic unit having a first input for receiving said digital baseband signal;

a one bit delay unit having an input coupled to the output of said exclusive “or” logic unit, said one bit delay unit having an output coupled to a second input of said exclusive “or” logic unit;

the output of said exclusive “or” logic unit providing an encoded digital baseband signal;

said encoded digital baseband signal coupled to a modulator so as to modulate spread spectrum carrier signal;

wherein said spread spectrum communication system is a geometric harmonic modulation communication system.

6. (Amended) A method for encoding a digital baseband signal in a spread spectrum communications system, the method comprising the steps of:

providing said digital baseband signal to a first input of an exclusive “or” unit;

performing an exclusive “or” operation on said first input and a second input of said exclusive “or” unit;

delaying the output of said exclusive “or” unit and providing the delayed output to said second input of said exclusive “or” unit;

the undelayed output of said exclusive “or” unit being the encoded digital baseband signal; wherein said spread spectrum communication system is a geometric harmonic modulation communication system.